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morning stiffness), BASFI, ASQoL and the SF-36. Literature review, and clinician and patient interviews, provided information on instrument content validity. Statistical analysis of measurement properties evaluated the reliability (test-retest and internal consistency), responsiveness and construct validity. Measurement properties were assessed using data from the RAPID-axSpA trial investigating certolizumab pegol (CZP) efficacy in axSpA. **RESULTS:** Reviewed AS literature revealed relevant concepts: physical function, pain, disease activity, morning stiffness, fatigue, disturbed sleep, depression, mobility problems, problems performing recreational activities/household tasks/self-care/work, and problems socializing. The same concepts were evident for the overall axSpA population in expert interviews. Concepts identified in patient interviews were consonant with both literature and expert opinion. All PRO instruments were satisfactorily reliable in the RAPID-axSpA population, with all test-retest intra-class correlation coefficients and internal consistency Cronbach's alphas >0.8. Validity was supported by agreement between PRO and clinician-rated measures. All the PRO measures showed good sensitivity to change, with large response sizes (effect size >0.8) on almost all measures from week 12 in RAPID-axSpA. No significant variations in psychometric properties were noted between axSpA sub-populations. **CONCLUSIONS:** This study indicates that both the content validity and the measurement properties of PRO instruments used in AS are preserved in the broad axSpA population. Questions remain about relying on classical test theory for validation and the value of using generic outcome measures when well-developed disease-specific measures are available.

PRM159

THE EFFECT OF LEAD TIME IN TIME TRADE-OFF VALUATION OF HEALTH STATES

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OBJECTIVES: Lead-time time trade-off (TTO) is a promising alternative to conventional TTO. The purpose of this study was to compare the values of EQ-5D-5L health states as measured by two TTO variants using different ratios of lead time to unhealthy time. **METHODS:** Data were collected as part of a wider multi-country pilot study. We elicited the values of 10 selected EQ-5D-5L health states from a convenience general population sample (N=406) using two lead-time TTO variants: 10 years of lead time in full health preceding 5 years of unhealthy time (standard method), and 5 years of lead time preceding 5 years of unhealthy time (experimental method). Participants self-completed the tasks using personal computers, with an interviewer supervising groups of participants. Participants were randomized to receive one of the two TTO variants to value a block of 5 EQ-5D-5L states. The TTO values were compared between the two study arms using random-effects linear models, with adjustment of age, gender, education, and health states. **RESULTS:** Health-state values generated from TTO valuation exercises using the longer lead time were slightly lower than those generated from exercises using the shorter lead time. The proportion of non-negative values in the standard and experimental arms was 81.2% and 86.7%, respectively (p=0.046); the grand mean TTO value was 0.35 and 0.43 for the standard and experimental arms, respectively (p=0.049). Exhaustion of tradable time occurred only in the experimental arm (0.46%) where the lead time was shorter. **CONCLUSIONS:** This study confirms earlier findings that the ratio of lead time to time in poor health exerts an effect on TTO values of health states. The more lead time is offered, the more time is traded. Different lead-time TTO variants should be carefully studied in order to achieve the best measurement of health-state values using this new method.

PRM160

DEAD TODAY OR DIE TOMORROW? A LITERATURE REVIEW OF THE EMPIRICAL EVIDENCE FOR INTER-TEMPORAL PREFERENCES OF HEALTH

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OBJECTIVES: Time preferences and discounting has become indoctrinated in the evaluation of health care technologies that generate future benefits and costs. Moreover, it remains a fundamental economic concept that is relied upon for the understanding of individuals' decision making with respect to health. The aim of this paper is to provide a systematic review of the empirical studies that have attempted to measure either individual or societal inter-temporal preferences regarding health. **METHODS:** A systematic search of peer-reviewed articles published in English during 1980 to 2012. The Preferred Reporting System for Systematic Reviews and Meta-Analysis (PRISMA) strategy was followed to ensure systematic selection of the papers. Articles were excluded if they did not report a discount rate or factor(s); and if health (and or life years) was not the domain for which discount estimates were provided. Two reviewers assessed the results of the search against a predefined exclusion and inclusion strategy to ensure appropriate inclusion of papers. **RESULTS:** A total 64 studies were identified within 54 published articles. A variety of methodological approaches have been implemented to measure preferences as well as testing over a variety of functional forms including hyperbolic and quasi-hyperbolic models. Estimates for a constant discount rate vary significantly from below zero to over 1000%. However, a weight of evidence in support of hyperbolic or at least non-constant discounting is emerging. Evidence is equivocal at best with regards to the relationship between time preferences measured and health behaviors. **CONCLUSIONS:** It has become common practice, and is often advised, that economic models of future costs and consequences should conduct sensitivity analyses regarding the discount rate chosen. From the empirical evidence it appears as important that such models also consider the sensitivity of models to other debatable concepts regarding discounting including the use of hyperbolic functions.

PRM161

IDENTIFYING PATIENT SUBPOPULATIONS IN EARLY DEVELOPMENT TO SUBSTANTIATE VALUE

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OBJECTIVES: Optimizing the clinical trial design and establishing the appropriate populations early in development are essential to substantiating a compelling value proposition. This project sought to provide an example of how a subpopulation investigation can inform early development strategy. **METHODS:** US 2012 National Health and Wellness Survey data were used. Respondents with pain in the past month were included. The distribution of work productivity (using the WPAI questionnaire) was examined and subpopulations of pain patients with particularly high or low impairment were described and compared to uncover groups with the highest likelihood of showing incremental benefit substantial enough to demonstrate value and compel funding. **RESULTS:** A total of 24,215 respondents (34.0%) reported pain in the past month (mean age=49.96; 51.92% were female). Mean level of pain severity in the last week was 4.71 (SD=2.72) and mean overall work productivity loss was 22.04% (SD=27.84%). Although these variables were significantly related (r=0.45, p<0.05), a substantial percentage of people with pain reported no work impairment (44.23%) creating a floor effect whereby regardless of the improvement in pain, no effect would be observed with respect to the ability to work. Conversely, 3.6% of people with pain reported 90% or more of their work week being impaired. Few demographic differences (age, sex) were observed between these two extremes, though those with 90%+ impairment were more likely to be obese (43.40%) versus those without any impairment (32.80%). **CONCLUSIONS:** Pain severity and work productivity loss were significantly related but many of those with pain reported so little impairment that no intervention could provide a compelling proposition. However, key subgroups (e.g. those obese) reported significant impairments with a much greater likelihood of demonstrating treatment benefit. Subgroup analysis early in development can identify the most relevant patient populations and help inform clinical trial design, optimize incremental value, and drive cost effectiveness.

PRM162

CROSS-CULTURAL ADAPTATION OF A RESEARCH VERSION OF THE REY AUDITORY VERBAL LEARNING TEST (RAVLT) INTO JAPANESE

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OBJECTIVES: The Rey Auditory Verbal Learning Test (RAVLT) is a cognitive test assessing verbal learning and memory. Fifteen words (List A) are presented across five learning trials and queried during two delayed-recall trials. A second 15-word list (List B) designed to interfere with recollection of the primary list is used. A recognition trial is administered during which subjects are asked to detect List A words from amidst distractor words from List B plus 20 others that have a semantic and/or a phonetic link with words from the lists. The objective of this abstract is to present the translation process of the RAVLT into Japanese. **METHODS:** For the 30 words from the two lists a direct translation was recommended based on collaborative efforts involving a speech therapist and a neuropsychologist. The goal was to maintain similar frequency of use and syllables (±1 syllable or ±2 syllables and ±2 characters) to the source English terms. For the 20 additional words used in the recognition trial, the translations had to respect the semantic and/or phonetic links to the words from the two lists. **RESULTS:** Discussions ensued around six of the 30 words from the lists due to difficulties in finding direct translations with the appropriate number of syllables. For the recognition words, the most problematic issue was finding equivalents maintaining the phonetic link to the Japanese translation. Ten recognition words had to be changed to uphold this linguistic property. For instance, the recognition word "Tree" required a phonetic link to the recall word "Turkey" so it was translated as "Box" (Ha Ko) to preserve the phonetic link with the word chosen to replace "Turkey" (i.e., "Pigeon" (Ha To)). **CONCLUSIONS:** This methodology enabled the production of a Japanese version of the RAVLT that preserved the intent and integrity of the source US English test.

PRM163

TOOLS USED TO IMPROVE MEDICATION ADHERENCE: A SYSTEMATIC REVIEW

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OBJECTIVES: According to PhRMA, 75% of Americans are non-adherent on one or more of their medications. Low adherence leads to worsening of the disease and unnecessary health care spending. Various tools have been used by health care professionals to improve medication adherence. The objective of this study is to conduct a systematic review to identify tools used to improve medication adherence and their impact on medication adherence. **METHODS:** PRISMA guidelines were followed for conducting a systematic review. A comprehensive electronic search of research databases (PubMed, MEDLINE, EBSCO, and PsycINFO), was performed. Combinations of search terms were generated by reviewing existing literature and consulting an expert librarian. Search terms included the names of each tool, adherence, compliance, persistence, and medication adherence. Studies were included if they were conducted after January 2000; involved the use of an adherence tool recommended by a certified health care professional; and measured the rate of medication adherence as an outcome. Studies on measuring adherence to vaccines and lifestyle modifications were excluded. **RESULTS:** Preliminary search yielded 637 articles. Articles were excluded following a title review (552) and an abstract review (43). Forty-two studies met the criteria for full review. Six different adherence tools